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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,782	12/27/2001	Chang Ho Oh	8734.041.00 - US	9753
30827 7590 08/14/2008 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006				
EXAMINER				
ERDEM, FAZLI				
ART UNIT		PAPER NUMBER		
2826				
MAIL DATE		DELIVERY MODE		
08/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/026,782

Applicant(s)

OH ET AL.

Examiner

FAZLI ERDEM

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 and 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/29/08 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hebiguchi (6,225,967) in view of Wildes et al. (5,951,304).

Regarding Claim 1, in Fig. 1 Hebiguchi discloses a plurality of first drive lines G1-G3 extending along a first direction and connected to the plurality of liquid crystal cells indicated by the middle portion of the drawing; a plurality of second drive lines S (connected to pad Sd1) extending along a second direction and connected to the plurality of liquid crystal cells; a plurality of first pad lines G2-G4 formed at relatively large angles (first pad lines G2-G4 are formed at approximately 180 degrees from first drive lines G1-G3. Note that first pad lines meet this limitation regardless of whether first

drive lines G1-G3 are located at an upper or lower part of a first driving circuit) extending from the plurality of first drive lines at first angles from the first direction; a plurality of second pad lines S (connected to source driver Sd2), extending from the plurality of second drive lines at second angles from the second direction; a plurality of first pads (not shown; they connect first drive lines G1-G3 to the output pins of gate driver Gd1, as explained at column 5 lines 14-30), each extending at an angle and connected to the corresponding first pad line for supplying external drive signals; and a plurality of second pads (not shown; they connect second pad lines S to the output pins of source driver Sd2, as explained at column 5 lines 5-13), each extending at an angle and connected to the corresponding second pad line for supplying external drive signals. Fig. 1 of Hebiguchi fails to disclose the angle relationship (that the angle at which each first pad extends is the same angle as the angle of the corresponding first pad line and that the angle at which each second pad extends is the same angle as the angle of the corresponding second pad line) between the pads and their corresponding pad lines. However, Wildes et al. disclose a fanout interconnection pad arrays where in Fig. 5, pads 62 oriented at the same angle as the angle of lines 50/52/54. As Wildes et al. explain at column 4, lines 56-60, this arrangement allows large numbers of pads (such as the 640 or more drive and signal line pads in Hebiguchi's device) to be aligned regardless of a possible lack of dimensional control during manufacture.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required angle relationship between the pads and

the drive lines in Hebiguchi as taught by Wildes in order to have many hundreds of pads and still retain a reliable wiring configuration.

Regarding Claim 2, in Fig. 1 of Hebiguchi first drive lines G are gate lines.

Regarding Claim 4, Fig. 1 of Hebiguchi includes a tape carrier package having a signal pad extending at the first angle and electrically contacting the plurality of first pads

Regarding Claim 5, Fig. 1 of Hebiguchi includes a driving circuit mounted on the tape carrier package for supplying the external drive signals

Regarding Claim 11, Fig. 1 of Hebiguchi discloses a liquid crystal display device, comprising: a substrate indicated by the middle portion of the figure; a plurality of orthogonal drive lines G/S on the substrate; a plurality of pads Gd/Sd extending at a first angle from an edge of the substrate; a plurality of pad lines, diagonal lines extending from the box shaped Gd1/Gd2/Gd3, extending at the first angle and interconnected between each of the plurality of orthogonal drive lines and pads. Fig. 1 fails to show the pad lines extending in an acute angle and the pad angles having relatively large angles. However, Wildes et al. disclose a fanout interconnection pad arrays where in Fig. 5, pads 62 extend at an acute angle and the end unit pads have relatively large angle.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the acute angle shaped pads in Fig.1 of Hebiguchi in order to have a pad layout with better controlled wiring/interconnection structure.

Regarding Claim 12, Fig. 1 of Hebiguchi includes gate lines G and data lines S

Regarding Claim 13, in Fig. 1 of Hebiguchi plurality of pads Gd1/Gd3 extending at the first angle are disposed at the edge of the substrate

Regarding Claim 14, Fig. 1 of Hebiguchi includes a tape carrier package Sd1/Sd2/Sd3 having a signal pad extending at the first angle and electrically contacting the plurality of pads.

Regarding Claim 15, in Fig. 1, Sd1/Sd2/Sd3 include a driving circuit, mounted on the tape carrier package for supplying external drive signals to the plurality of drive lines

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4, 5, and 11-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FAZLI ERDEM whose telephone number is (571)272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FE

August 8, 2008

**/Thomas L Dickey/
Primary Examiner, Art Unit 2826**